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DRAFT ENVIRONMENTAL ASSESSMENT

SECTION AND DUTTON WATER TREATMENT PLANT EXPANSION

Jackson County, Alabama

TENNESSEE VALLEY AUTHORITY
COOPERATING AGENCY
WATER WORKS BOARDS OF THE TOWNS OF SECTION AND DUTTON

ENVIRONMENTAL INFORMATION PROVIDED BY
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Environmental Assessment **February 2004**

Proposed project: Section and Dutton Water Treatment Plant Expansion
Jackson County, Alabama

Lead agency: TENNESSEE VALLEY AUTHORITY

Cooperating agencies: WATER WORKS BOARDS OF SECTION AND DUTTON
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Comments must be submitted by March 26, 2004

Abstract: TVA proposes to sell approximately 31 acres of TVA property on Guntersville Reservoir, Jackson County, Alabama, to the Water Works Boards of the Towns of Section and Dutton to expand their water treatment plant. A small portion of the TVA property would be used for sludge drying beds, with the remainder serving as a security buffer for the water plant. No endangered species, wetlands, historic properties, or other important environmental resources are present on the property proposed for transfer. The water treatment plant sludge contains water, clay, and sand. Metals of interest in the sludge primarily include aluminum, with trace amounts of heavy metals. The concentrations that would likely result from land application on the TVA property are not expected to be of concern and would pose minimal environmental risks. TVA proposes to sell the property.

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CHAPTER 1

1. PURPOSE OF AND NEED FOR ACTION

1.1. Proposed Action

The Waterworks Boards of the Towns of Section and Dutton propose to expand their existing drinking water treatment facility on Guntersville Reservoir. Currently, the facility has a capacity of 4 million gallons per day (MGD). The proposed upgrades would expand plant capacity to 8 MGD. This capacity will allow the Section and Dutton water system to better serve current customers and anticipated growth in rural Jackson and DeKalb Counties. The Section-Dutton Water Treatment Plant produces water for approximately 24,000 people, and 660 additional commercial, farm, and industrial water users in the Sand Mountain area. The utility sells water to other utilities in the Jackson and DeKalb County areas. A couple of these utilities are outside of the Tennessee River basin, but there is not expected to be a net interbasin transfer of water. The water treatment plant additions and renovations would provide the filtering and raw water pumping capacity to allow the pumping of 8 MGD. In addition, additional buildings would be constructed for chemical storage, and a sludge dewatering facility is proposed to allow the water system to dewater sludge on site, thus providing cost savings and a more efficient operation for the plant.

Sludge is generated when filters are cleaned (backwashed) and when sedimentation basins are cleaned. This sludge has accumulated to 825 dry tons. Current plans are to continue to use the existing sedimentation pond, install sludge removal equipment, and pump the sludge to drying beds. Then the sludge will be land applied or stored.

The proposed TVA action to meet this purpose and need is the sale of 31 acres of TVA land adjacent to the current water plant. The TVA land would be used for sludge drying beds and for additional buffer area surrounding the water treatment plant. Approximately 10 acres of the property would be used for sludge drying beds and land application of sludge and the remainder would serve as a security buffer. A section 26a permit for the water intake was issued on May 2, 2002. Other federal actions, which were already taken prior to the request for TVA land, included:

- Provision of RUS loan funding for water treatment plant additions and renovations on the existing plant site, including the construction of four additional filters, renovation of five existing filters, a new chemical feed and storage facility, additions and renovations to the existing raw water pump station. These actions were assessed in a RUS Environmental Information Document dated July 2002.

- Provision of RUS loan funding for new storage tanks in Geraldine and Section

1.2. Other Pertinent Environmental Reviews or Documentation

The Water Works Boards prepared an Environmental Report in July 2002 in support of their application for Rural Development funding for the treatment plant expansion. This document is attached and incorporated by reference into this EA.

1.3. Public Review

The draft environmental assessment was circulated to state and federal agencies for comment. Public notice of the proposed land sale and availability of the EA were made at the same time.

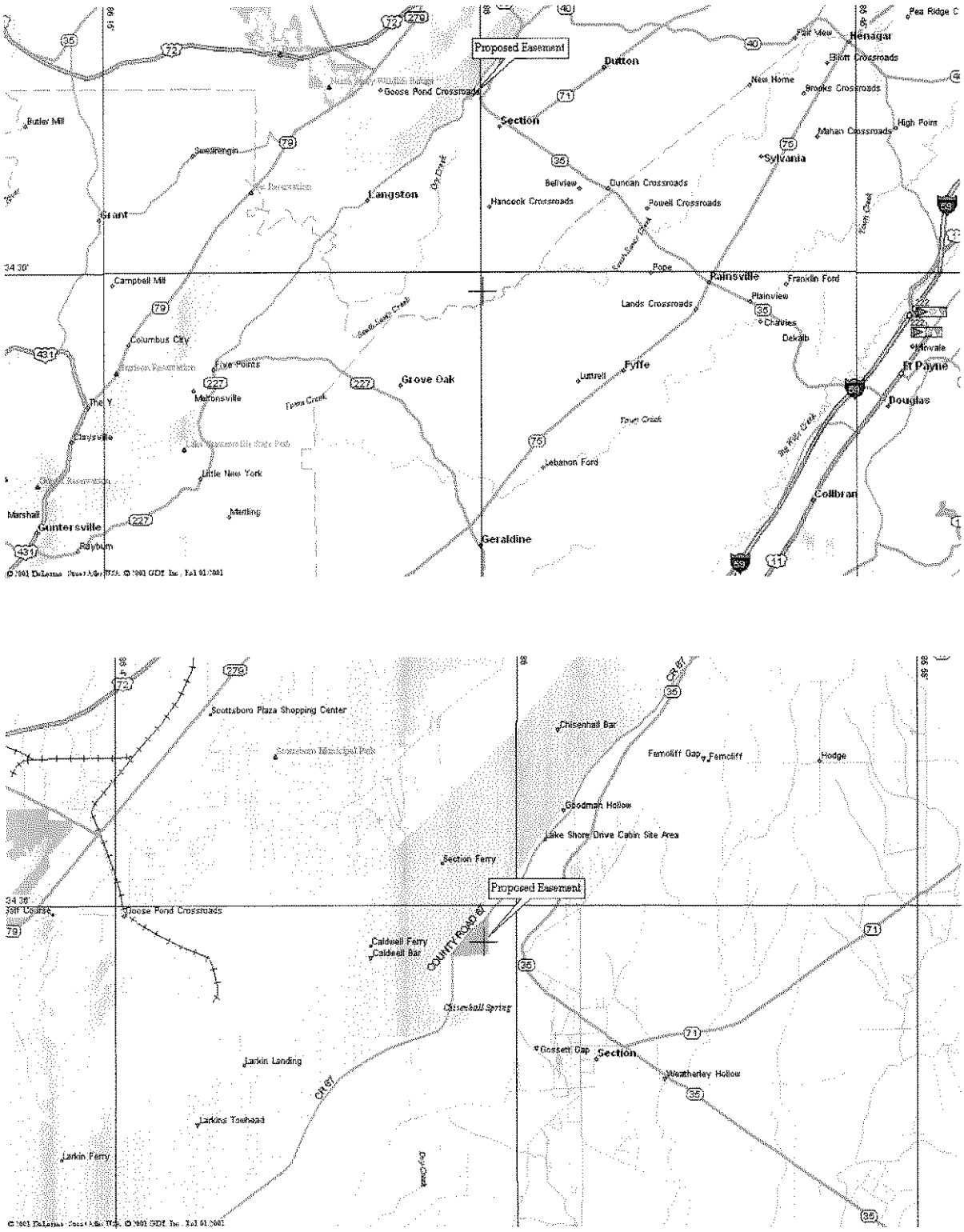

Figure 1-1. Vicinity Maps of Proposed TVA Property Sale for Waterworks Boards of Towns of Section and Dutton

1.4. Necessary Federal Permits or Licenses

In addition to the Section 404 and Section 26a permits for the water intake, the water treatment plant holds a National Pollution Discharge Elimination System (NPDES) Permit for discharge of water from the sludge settling basins into Guntersville Reservoir. An additional water supply permit under the Safe Drinking Water Act will be needed to operate the plant at an 8 MGD level. No solid waste permits are expected to be needed for land application of sludge.

CHAPTER 2

2. ALTERNATIVES INCLUDING THE PROPOSED ACTION

The Water Works Boards considered several alternatives for disposition of the alum sludge from the water treatment plant. Instead of constructing large drying beds, vacuum drying beds could be constructed on less land. However, the sludge would still need to be disposed of somewhere. The site location in a narrow riverine corridor at the base of the Cumberland escarpment would make off-site hauling to a landfill or a farm for land application costly. The nearest potential site for land application of sludge would be six or more miles from the plant. The alternatives available to TVA are No Action (do not sell the property) or Action (sell the property). TVA also could consider selling a smaller area of land; however, because of the insignificant impacts of the proposed action and the justification provided for the larger acreage, this alternative will not be discussed in detail.

2.1. Alternatives

2.1.1. Alternative A – The No Action Alternative

Under No Action, TVA would not sell its property. The Water Works Boards would likely pursue other sludge drying alternatives, such as vacuum drying beds and off-site hauling of alum sludge. The TVA property would remain in Natural Resource Conservation zoning and available to the public for uses such as hiking, hunting, and wildlife observation.

2.1.2. Alternative B – Sell 31 Acres to Water Works Boards

Under Alternative B, TVA would sell the 31 acres of property requested by the Water Works Boards. The Water Works Boards would construct a series of 75' by 75' drying beds on TVA property and clear property for use in land application of sludge. An existing TVA road easement right-of-way to the Water Works Boards to access tanks used in pumping water up the escarpment would be abandoned, since the property would now be in fee ownership of the Water Works Boards. Access to the property would be controlled by the Water Works Boards and would likely not be available for general public use.

2.2. The Preferred Alternative

TVA's preferred alternative is Alternative B, Sell 31 Acres to Water Works Boards. This would best meet the applicant's purpose and need for additional property for alum sludge management and water plant security. In addition, there would be minimal or no adverse environmental impacts from this alternative.

CHAPTER 3

3. AFFECTED ENVIRONMENT

The Water Works Boards of Section and Dutton currently operates a drinking water treatment plant on 7.6 acres of TVA land adjacent to Jackson County Road (CR) 67 approximately one half mile north of the Chisenhall Springs embayment of Guntersville Reservoir and 3 miles south of Alabama 35 and the B.B. Comer Bridge crossing of Guntersville Reservoir. The 31-acre TVA tract of land proposed for sale is located immediately adjacent to the treatment plant and to the north of the plant. The Water Works Boards currently hold a 60-foot right-of-way easement across the 31-acre tract to allow use of the Old Section Ferry Road to access water tank facilities on the escarpment.

Other past, present, and reasonably foreseeable actions that have the potential to cumulatively affect resources involved in the proposed land sale include the four-lane upgrades to Alabama 35 between Scottsboro and Fort Payne and the possible future interconnection of the Section-Dutton and Scottsboro water systems.

3.1. Alum Sludge Characteristics and Current Disposal

Currently, the Water Works Boards facility produces alum sludge as a result of the water treatment process. Surface water from Guntersville Reservoir is treated to remove silt and detritus. Alum and polymers are added to remove additional impurities. Wastewater sludge consists of silt, detritus, inerts, organics, calcium carbonate, aluminum hydroxide, magnesium hydroxide, sands, and clay. During the summer, sludge may include algae. Samples of the sludge from the existing settling basin, taken in 2002, consist of the following components, by weighted average density: The major component of sludge in the basin is water, with smaller amounts of clay and sand. Aluminum oxide was determined to average 12.6% by weight on average. Calcium and magnesium are also found in the sludge, at levels ranging from 900 to 3000 parts per million. Other metals present in the sludge are lead (1.7 ppm), mercury (0.36 ppm), arsenic (1.55 ppm), and chromium (2.1 ppm). These levels are below the thresholds that would classify the sludge as hazardous waste under the Resource Conservation and Recovery Act (RCRA). The sludge has not been tested for other hazardous wastes, including cadmium, nickel, copper, zinc, and manganese. The pH of the sludge is between 6.0 and 6.8, which is near neutral in acidity. The material is accumulated on-site for two to three years in a sludge drying basin, then pressed to remove water and transported to a permitted landfill for disposal.

3.2. Terrestrial Ecology

The proposed sale tract is located in the Plateau Escarpment Ecoregion as designated by EPA and Alabama state agencies (EPA, 2001). Guntersville Reservoir is located in the Sequatchie Valley, while Section and Dutton and most of the water system customers are located in the Plateau area (EPA, 2001). These three distinct ecological subregions are all subdivisions of the Southwestern Appalachians ecoregion, which stretches from Kentucky to Alabama.

The tract is steep and rocky, with numerous large limestone bounders. With the exception of a power line right of way along the southern property line, the entire tract is forested, with numerous red cedars, shagbark hickory, oaks, and other small hardwoods. An old roadbed

(Old Section Ferry Road), occasionally used by the Water Works Boards for access to a water tank on the escarpment, extends north-south through the middle of the property. The tract was surveyed for endangered and threatened species, but no federally-listed species were found to be present on the property. By letter of September 30, 2003, the U.S. Fish and Wildlife Service agreed that no further endangered species consultation was needed prior to implementation of the water plant expansion. The tract was surveyed for wetlands by the U.S. Army Corps of Engineers, and no wetlands were found. By letter of July 22, 2003, no Section 404 permits were determined to be needed for construction of the sludge drying beds or land application of sludge. By letter of June 5, 2002, the Natural Resources Conservation Service verified that no prime farmland existed on the TVA property.

3.3. Recreation

Other than occasional hikers and hunters, there is limited use of the 31-acre tract. TVA Planned Tract XGR-189PT2, which is across CR 67, is designated for Public Recreation. This is used for a boating access area. Facilities include a boat ramp, parking area, and courtesy dock. These facilities are maintained by the Alabama Department of Conservation and Natural Resources.

3.4. Cultural Resources

Several historic building sites are known from the area near the 31-acre tract, including the site of the Hales Chapel School, which adjoins the northern tip of the property. A pedestrian walkover and cultural resources survey was conducted in August 2003. Evidence of a late 19th century or early 20th century house was found, but no structural remains were found and the site was determined to offer no additional research potential. The survey concluded that no historic properties eligible for the National Register of Historic Places are found on the TVA tract proposed for lease.

CHAPTER 4

4. ENVIRONMENTAL CONSEQUENCES

The primary environmental consequences evaluated are the loss of terrestrial habitat from forest removal of up to 10 acres of the 31-acre tract and the impacts of land application of alum sludge on the sale property and Guntersville Reservoir. These impacts are discussed below.

4.1. Impacts of land application of alum sludge

4.1.1. Alternative A

Under the No Action Alternative, the land would remain forested and not be used for water treatment sludge application. Vaccuum drying beds would be used to pull extra water out of the sludge. The sludge would likely be transported elsewhere to a landfill or land-applied on agricultural property within Jackson County. Land application sites chosen would be outside of floodplains and away from streambanks. Prior to land disposal, the sludge would have to be tested for RCRA metals to ensure that it is below the threshold that would classify the material as hazardous waste. Because the pH of the sludge is near neutral, the aluminum is largely insoluble and would not be expected to be toxic to plants. Application levels up to 30 tons per acre are possible. While land application (beneficial use) of sludge is a possibility, it is likely to be similar in cost to hauling the sludge to a landfill.

4.1.2. Alternative B

Under Alternative B, about 10 acres of the 31-acre TVA tract would be cleared and developed for drying beds for sludge, a land application area, and clear well expansion. The drying beds would be about 75' by 75' in dimension. The sludge would be land applied on the TVA property and mixed in with the soil. Impacts of this application would be expected to be similar to agricultural application of sludge. Alum would be applied at levels up to 30 tons per acre and plowed into the top two feet of soil. Grass or other plants tolerant of alum sludge would be planted. The low heavy metal concentrations would likely be stabilized in soil and not be found in runoff to Guntersville Reservoir. If sludge quantities exceed that which can be land applied, the sludge would be stored or hauled to a landfill.

4.2. Impacts of Land Clearing

4.2.1. Alternative A

No land clearing of the TVA property is expected under the No Action alternative.

4.2.2. Alternative B

Up to 10 acres of the lowland area of the tract could be cleared and used for land application of alum sludge. The remaining 20 acres would likely remain forested and serve as a buffer for the treatment plant. TVA would require that native plants or non-invasive exotic plants be planted on the cleared property.

4.3. Cultural Resources

By letter of August 29, 2003, TVA provided its determination that no historic properties would be affected by TVA's action of selling property to the Water Works Boards. By letter of September 30, 2003, the Alabama Historical Commission concurred with TVA's findings.

4.4. Summary of TVA Commitments and Proposed Mitigation Measures

1. Prior to land application, sludge will be tested for all RCRA-regulated metals and will not be applied if the material is classified as hazardous.

2. Native plants or non-invasive exotic plants will be planted to stabilize areas where land application of alum sludge takes place.

CHAPTER 5

5. LIST OF PREPARERS

5.1. NEPA Project Management

Harold M. Draper

Position:	NEPA Specialist
Education/Experience:	B.S. Botany, B.S. Conservation, MS, D.Sc., Engineering and Policy. 13 years experience in NEPA document preparation; 7 years experience in state renewable energy programs
Involvement:	Document preparation

5.2. Other TVA Contributors

Phil Mummert

Involvement:	Solid Waste reviewer

CHAPTER 6

6. LIST OF AGENCIES AND PERSONS CONSULTED

Federal Agencies

U.S. Fish and Wildlife Service
U.S. Army Corps of Engineers

State Agencies

Alabama Department of Environmental Management
Alabama Historical Commission
Top of Alabama Regional Council of Governments

CHAPTER 7

7. SUPPORTING INFORMATION

7.1. Literature Cited

EPA, 2001. Ecoregions of Alabama. G. E. Griffith, J. M. Omernik, J.A. Comstock, G. Martin, A. Goddard, and V.J. Hulcher. U.S. Environmental Protection Agency, National Health and Environmental Effects Research Laboratory, Corvallis, OR.